



# TEXAS STATE SOIL & WATER CONSERVATION BOARD

## NORTH BOSQUE RIVER WATERSHED DAIRY MANURE EXPORT SUPPORT

STATUS REPORT — MAY 2005

### Exporting Composted Dairy Manure from the Watershed

The TSSWCB and the TCEQ, in partnership, initiated an innovative regional project to reduce phosphorus levels in the North Bosque and Leon River watersheds. The Dairy Manure Export Support (DMES) program offers financial incentives to commercial haulers to transport raw manure from dairy farms in the North Bosque and Leon River watersheds to commercial composting operations approved by the TCEQ's Composted Manure Incentive Project (CMIP). The raw manure is then processed by composting so it may be put to beneficial use. Organizations such as the Texas Department of Transportation (TxDOT) and municipalities, as well as agricultural producers and the general public are some of the target purchasers of the composted product. The TCEQ provides rebates to these target purchasers to facilitate the development of a sustainable market.

### Dairy Manure Export Support (DMES)

Overall program management is controlled through the TSSWCB. The TSSWCB has contracted the everyday activities to the Texas Institute for Applied Environmental Research (TIAER) at Tarleton State University. In April 2001, TIAER subcontracted many aspects of the program to the Foundation for Organic Resources Management (FORM), which was replaced by imanage, LLC in July 2003. Both FORM, and later imanage, LLC, have managed the DMES program at the local level through a program office located in Stephenville, Texas. The TIAER contract to manage the program extends through August 31, 2005.

### Eligibility Requirements

#### **Dairies**

A part of the dairy must be located in the North Bosque or Leon River watersheds.

The dairy must have (or have applied for) a valid Water Quality Management Plan or a Nutrient Utilization Plan/Permit Nutrient Management Plan.

#### **Composters**

Each composting facility must be compliant with all state regulations regarding compost facilities and be approved by the Texas Commission on Environmental

Quality (TCEQ) for participation in TCEQ's Composted Manure Incentive Project (CMIP).

#### **Haulers**

Attend a workshop convened by TSSWCB's contractor.

Obtain a vendor number from the State Comptroller and authorize direct deposit.

### Reimbursement Process

Individual hauling jobs are coordinated through manure haulers that make arrangements with dairies and commercial composting operations. A manure hauler completes a "job notification form" which is then submitted to the DMES office for approval. Once approval is received, the manure hauler performs the work and submits to the DMES office an invoice signed by a representative of the dairy, accompanied by load tickets signed by a representative of the composting facility, and a scale ticket for each load. The DMES office prepares semi-monthly reimbursement request summaries, has them approved by TIAER, then submits them to the TSSWCB for payment. Because the TSSWCB is using Clean Water Act, §319(h) funding from the U.S. Environmental Protection Agency (EPA), the TSSWCB must then request that the funds be released from EPA to the TSSWCB. The TSSWCB then issues reimbursements via direct deposit to the manure haulers.

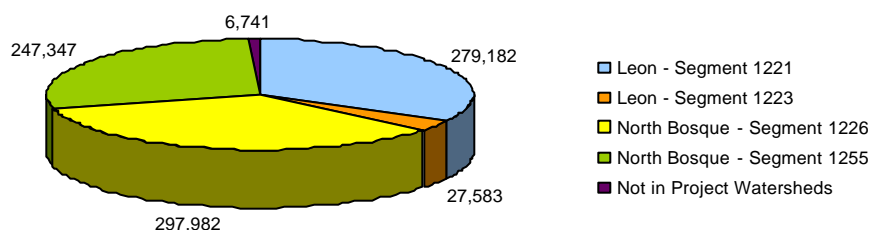
### Financial Information

DMES funding was provided by three CWA §319(h) grants (1999, 2000, and 2002 fiscal years) from EPA totaling \$2,696,885 and by an appropriation of \$1,131,726 from the 77<sup>th</sup> Texas Legislature.

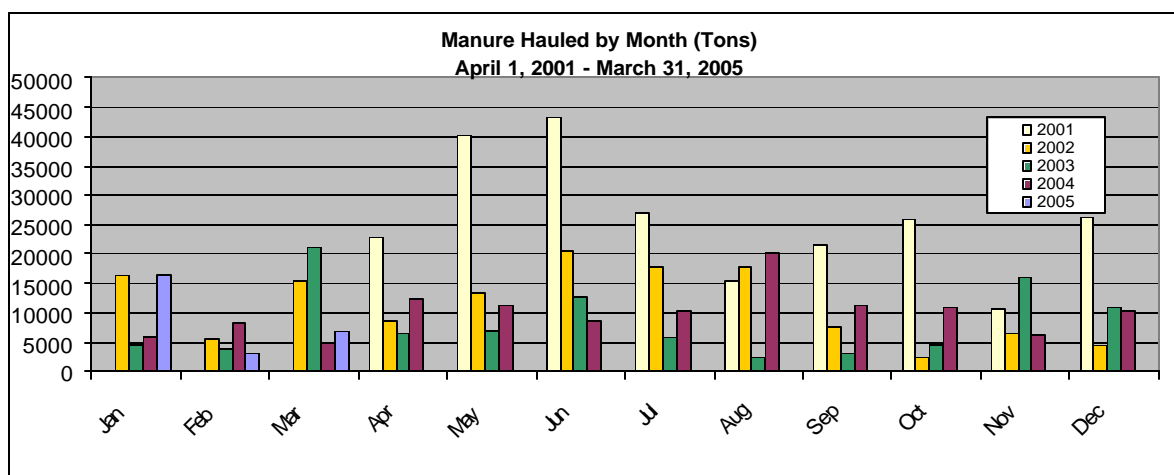
### Results

The initial target amount of manure to be exported from dairy farms participating in the project was 300,000 tons during a 36-month project period from November 2000 through October 2003. As of March 31, 2005, more than 850,000 tons of manure has been hauled under the DMES program. (Figures 1 and 2.) It is estimated that this prevented the land application of approximately 2.8 million lbs of phosphorus.

**Manure Hauled by Watershed (Tons) - through March 31, 2005**



*Fig 1. Dairy manure hauled by watershed (tons) – through March 31, 2005*



*Fig 2. Dairy manure hauled by month (tons) – April 1, 2001 – March 31, 2005.*

## **Preliminary Evaluation of Impacts from the Manure Composting Program on Stream Water Quality**

Texas Institute for Applied Environmental Research (TIAER) has released a report titled *Preliminary Evaluation of Impacts from the Manure Composting Program on Stream Water Quality*. In this preliminary report TIAER has documented 19% (not statistically significant), 24% (marginally significant), and 39% (statistically significant) reductions in orthophosphate phosphorus (PO<sub>4</sub>-P) concentrations for three microwatershed monitoring sites in the North Bosque River watershed.

The land area above these three sites had the highest level of participation in the manure composting program when the amount of manure hauled was normalized on a per cow per unit land area basis. About 50% of the land area in the drainage areas above the two sites showing significant reductions was associated with dairy waste application fields. These results indicate a positive correlation between the practices employed under the Implementation Plan and a reduction in phosphorus loadings.

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